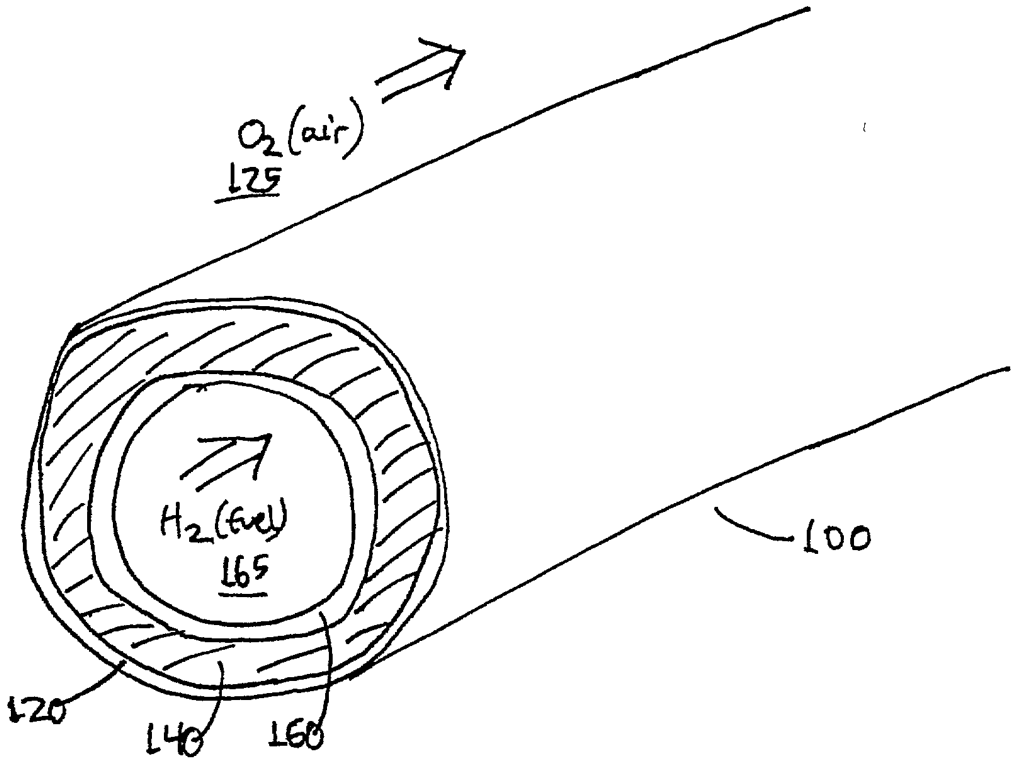

O_2 (air)
H_2 (fuel)

Fig. 1A

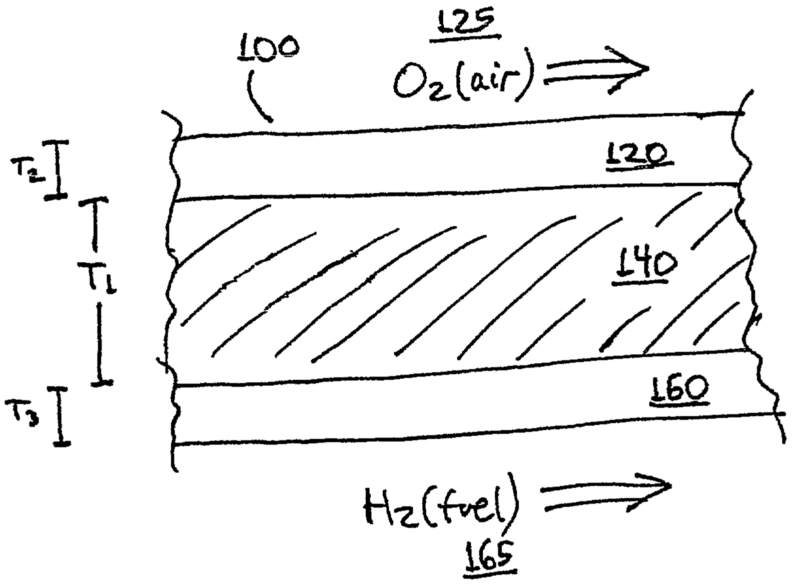

125
100
O_2 (air)
T_2
120
T_1
140
T_3
160
H_2 (fuel)
165

Fig. 1B

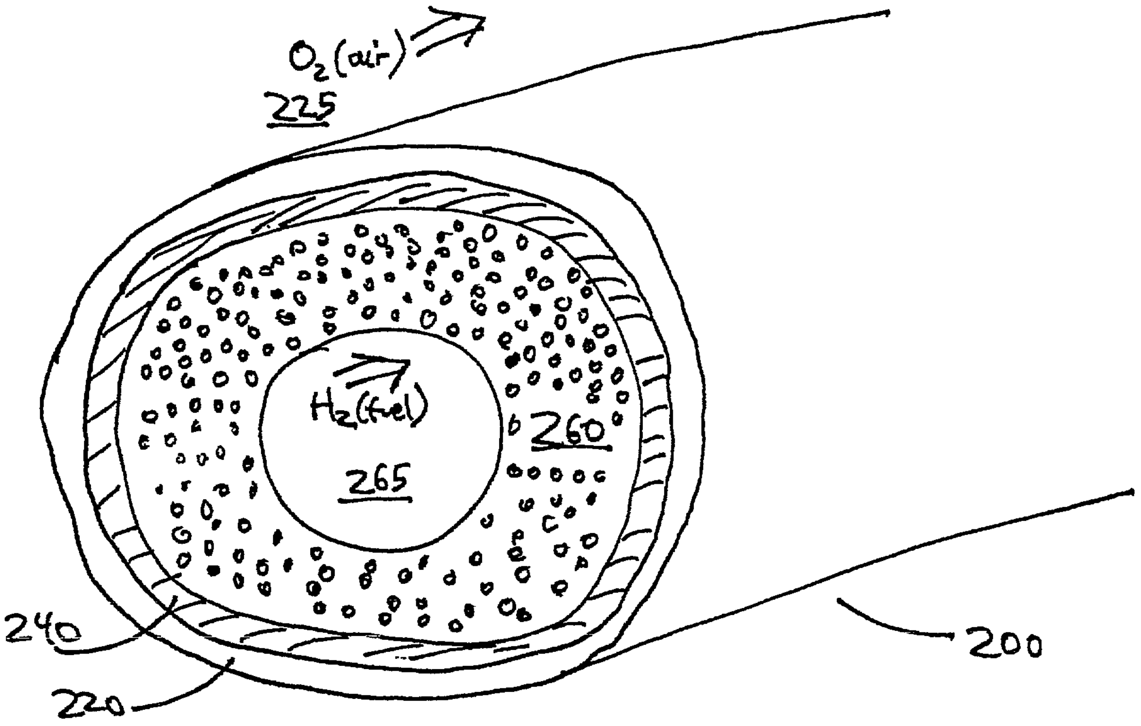

O_2 (air)
H_2 (fuel)

Fig. 2A

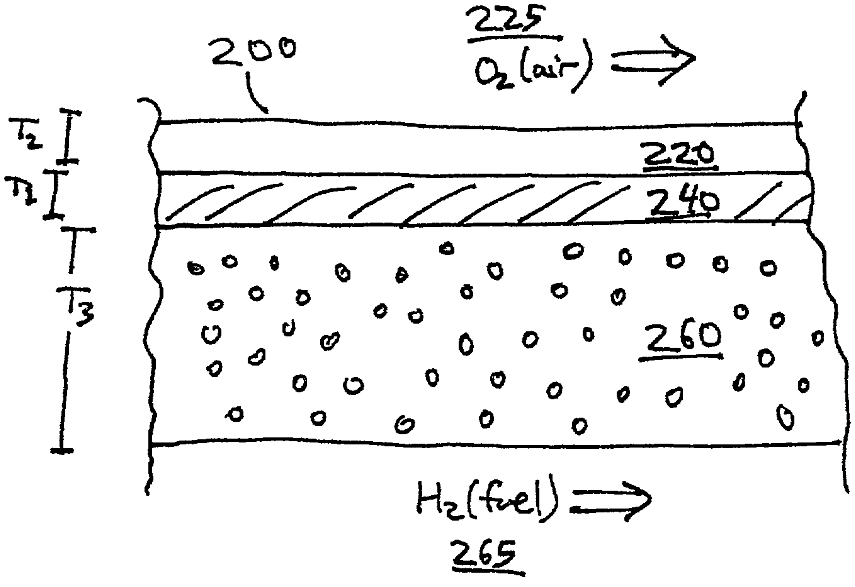

200
225
O_2 (air)
T_2
T_1
T_3
220
240
260
H_2 (fuel)
265

Fig. 2B

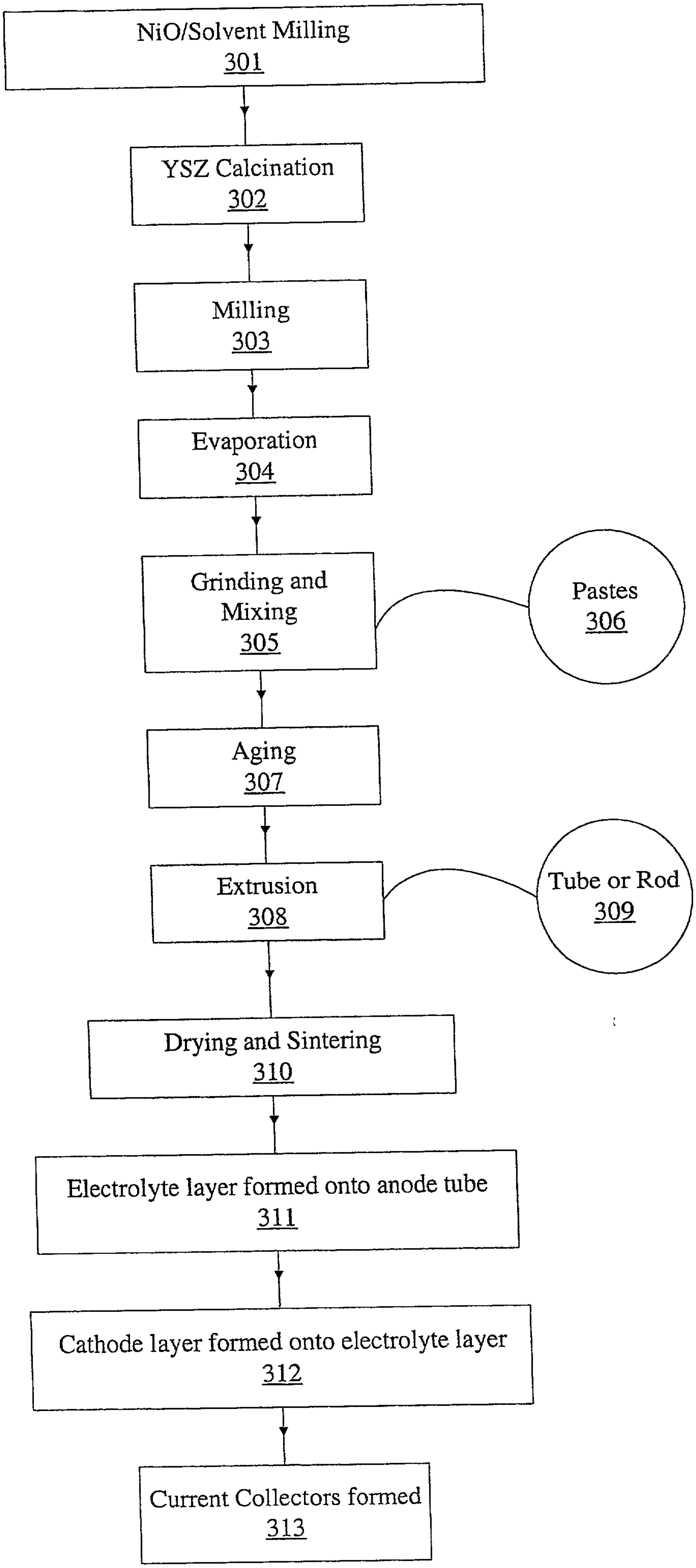

NiO/Solvent Milling
301
YSZ Calcination
302
Milling
303
Evaporation
304
Grinding and Mixing
305
Pastes
306
Aging
307
Extrusion
308
Tube or Rod
309
Drying and Sintering
310
Electrolyte layer formed onto anode tube
311
Cathode layer formed onto electrolyte layer
312
Current Collectors formed
313

Fig. 3

09854070.052201

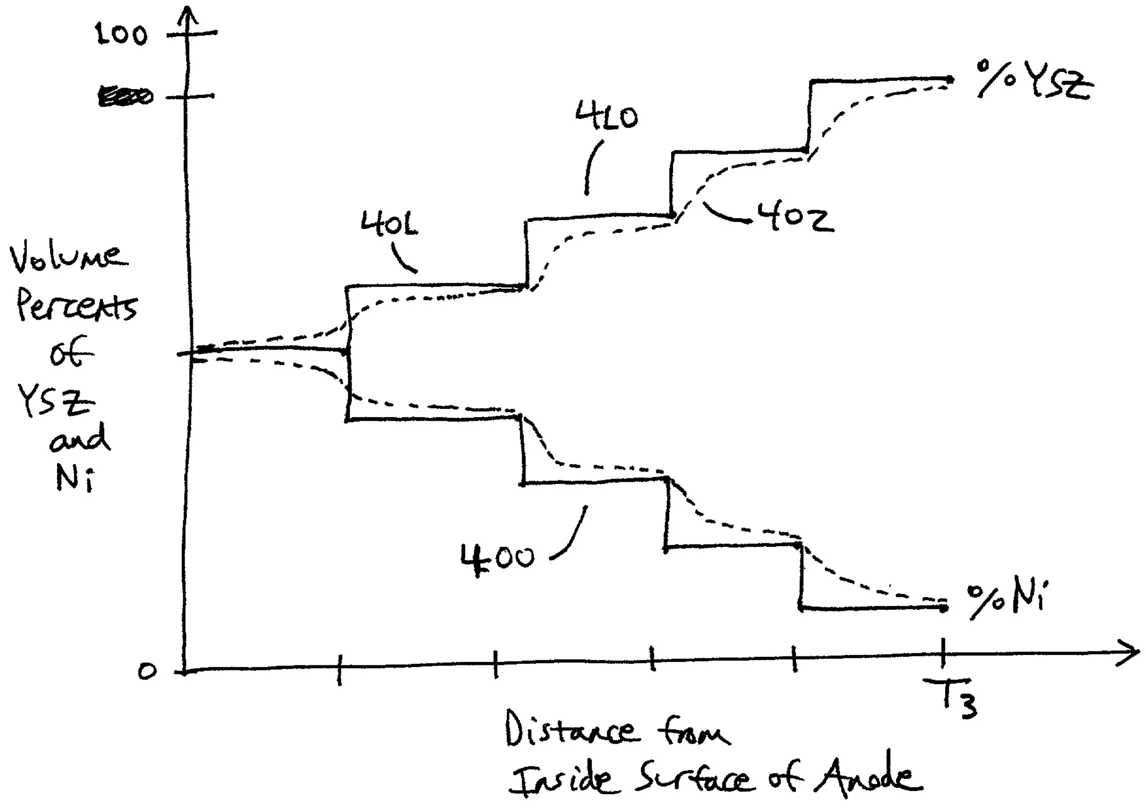

100
0
Volume Percents of YSZ and Ni
410
401
402
400
% YSZ
% Ni
T3
Distance from Inside Surface of Anode

Fig. 4

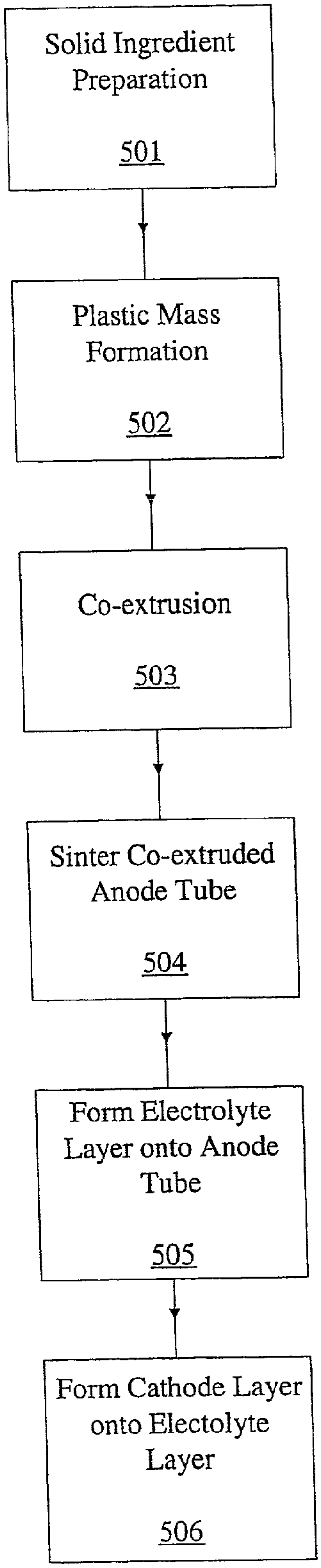
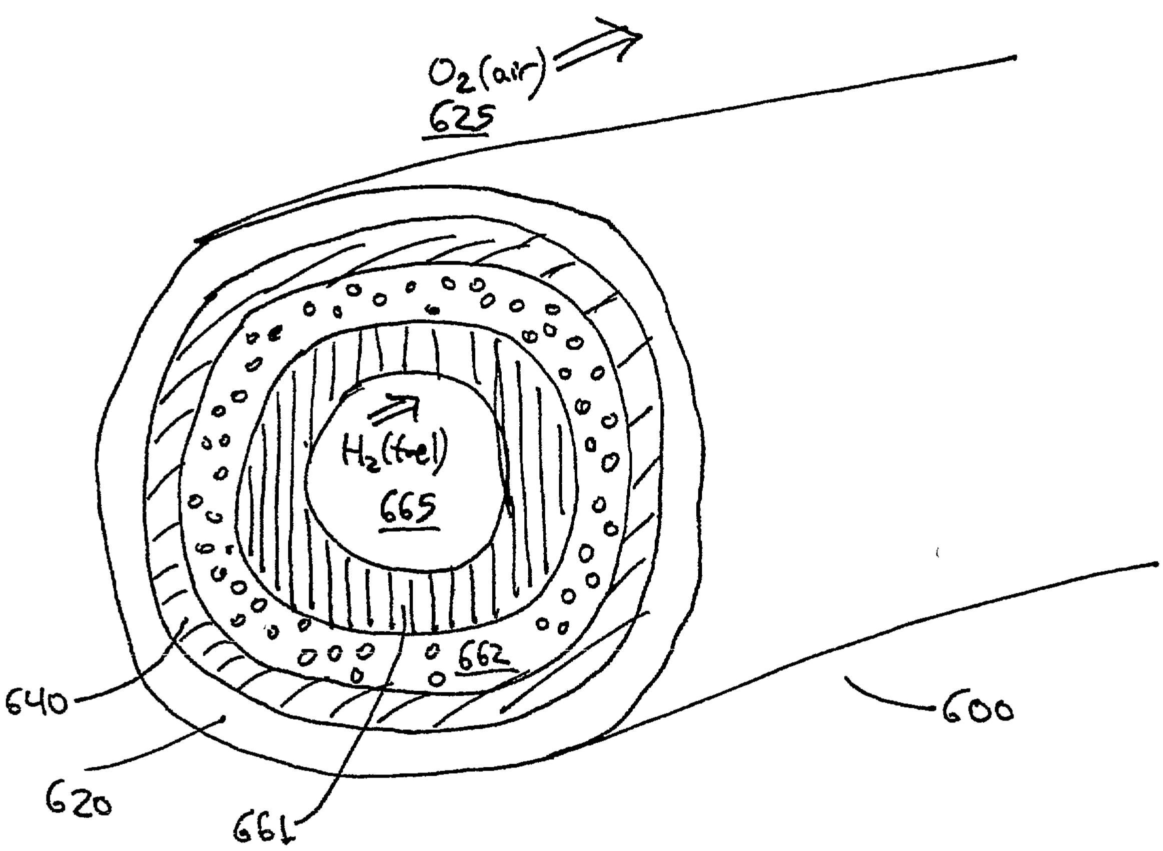

Solid Ingredient Preparation
501
Plastic Mass Formation
502
Co-extrusion
503
Sinter Co-extruded Anode Tube
504
Form Electrolyte Layer onto Anode Tube
505
Form Cathode Layer onto Electolyte Layer
506

Fig. 5

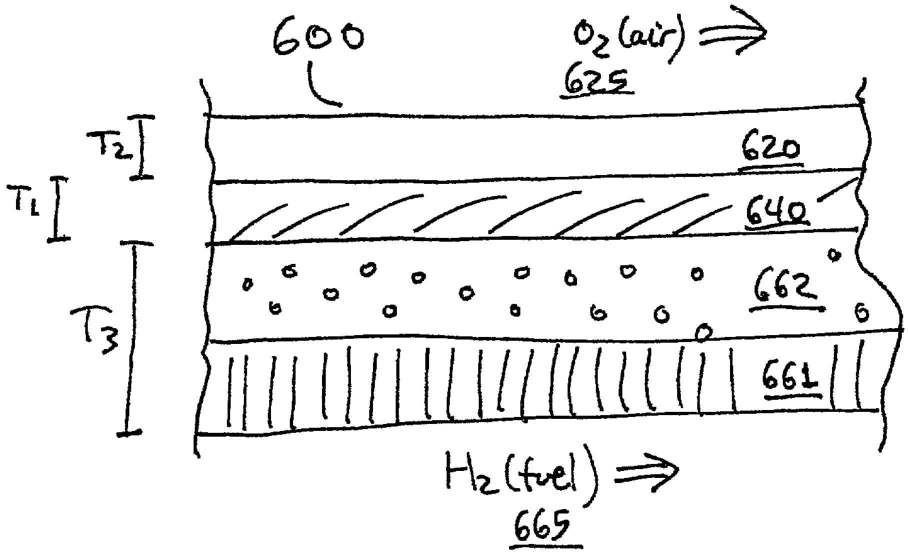
09864070 .052201



O_2(air)
625
H_2(fuel)
665
662
640
600
620
661

Fig. 6A

10055584 .042902



600
O_2(air)
625
T_2
620
T_1
640
T_3
662
661
H_2(fuel)
665

Fig. 6B

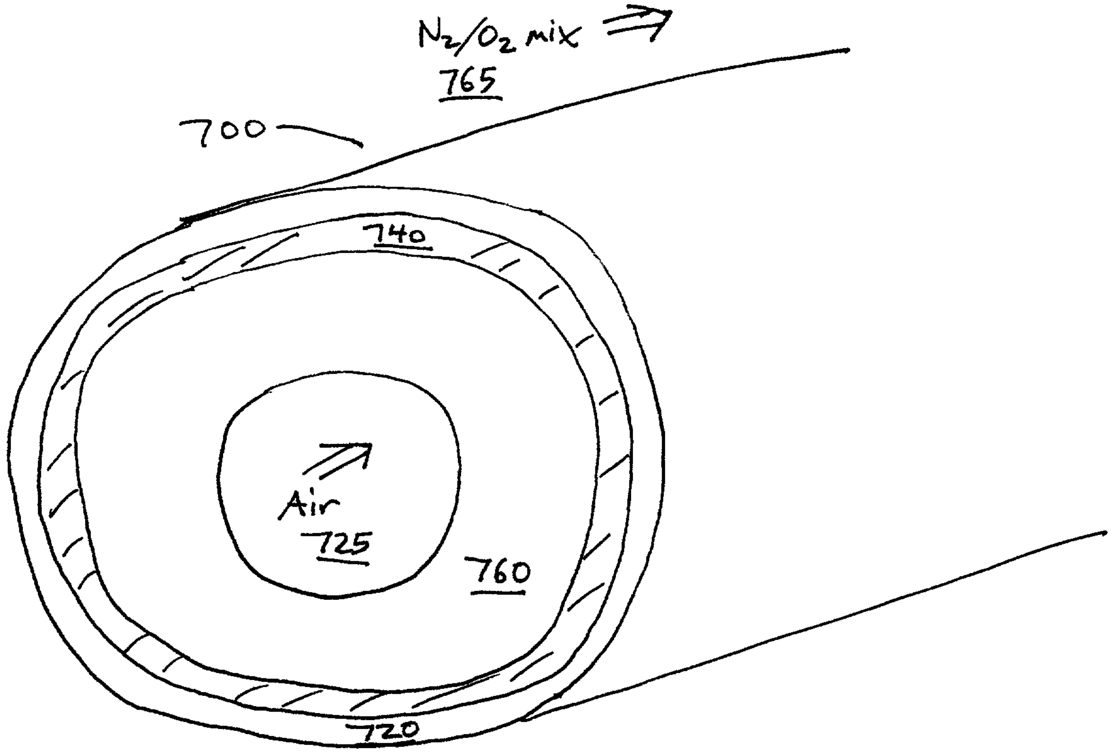

N₂/O₂ mix
765
700
740
Air
725
760
720

Fig. 7A

09854070 .052201

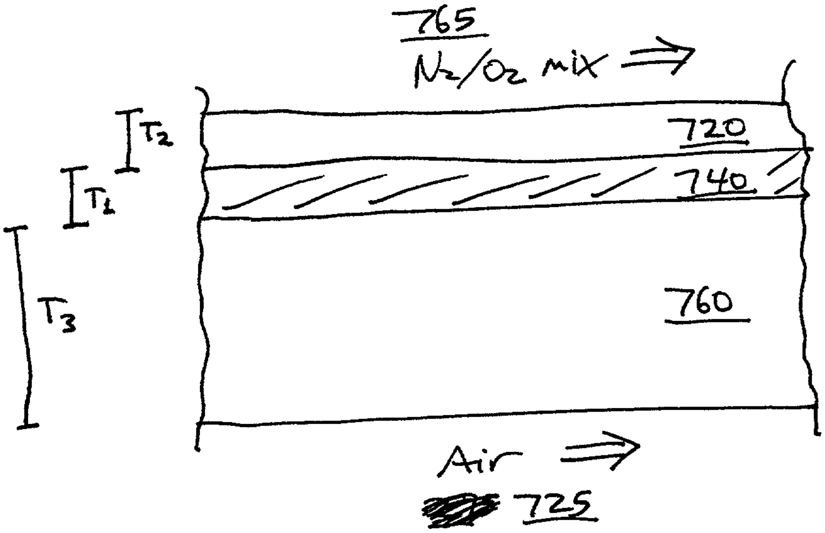

765
N₂/O₂ mix
T₂
720
T₁
740
T₃
760
Air
725

Fig. 7B